

V Semester B.Sc. Examination, Nov./Dec. 2016  
(Semester Scheme) (CBCS) (Fresh) (2016-2017 and Onwards)  
**CHEMISTRY – V**  
**Organic Chemistry**

Time : 3 Hours

Max. Marks : 70

- Instructions:** i) The question paper has **two** Parts. Answer **both** the Parts.  
ii) **Draw** diagrams and chemical equations **wherever** necessary.

**PART – A**

Answer **any eight** of the following questions. **Each** question carries **two** marks. (8×2=16)

1. Explain plane of symmetry with an example.
2. Write R and S configurations of Glyceraldehyde.
3. How is benzene diazonium chloride prepared from aniline ? Give the equation.
4. Compare the basicity of Pyrrole and Pyridine.
5. How is ethylamine obtained from Gabriel's Phthalimide method ?
6. Give any one method for the preparation of Furan.
7. How do you prove the presence of five hydroxyl groups in glucose ?
8. Mention one use each for morphine and menthol.
9. How is the presence of  $-N-CH_3$  group established in Nicotine ?
10. What is TMS ? Mention its use.
11. Give the principles of Green Chemistry.
12. What are direct dyes ? Give an example.



## PART - B

Answer **any nine** of the following questions. **Each** question carries **six** marks. (9×6=54)

13. a) Discuss the optical isomerism in lactic acid.  
b) Write E and Z configurations of 1, 4-butanedioic acid. (4+2)
14. a) Draw the structures of the geometrical isomers of 1, 2-dimethyl Cyclohexane. Which form is more stable and why?  
b) Draw the conformers of Decalin. (4+2)
15. a) What is resolution? Explain the chemical method of resolution of a racemic mixture.  
b) Aniline is less basic than ammonia. Give reason. (4+2)
16. a) What is Hinsberg reagent? How is it used to distinguish primary, secondary and tertiary amines?  
b) What happens when Indole is nitrated? Give equation. (4+2)
17. a) Explain with equations how the following conversions are brought about:  
i) Benzene diazonium chloride to P-hydroxy azobenzene  
ii) Aniline to acetanilide.  
b) What is Hofmann's elimination reaction? (4+2)
18. a) Give the skraup's synthesis of quinoline.  
b) Discuss the aromaticity of thiophene based on resonance theory. (4+2)
19. a) Starting from methyl-heptenone explain the process of synthesis of Citral.  
b) State Isoprene rule. (4+2)
20. a) What are alkaloids? Mention the general characteristics of alkaloids.  
b) Write the structure of Camphor. Mention its use. (4+2)
21. a) How do you convert fructose to glucose? Give equations.  
b) Write the Haworth structure of  $\alpha$ -maltose. (4+2)

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22. a) What is meant by :
- i) Spin-spin coupling
  - ii) Blue shift.
- b) What is Finger print region in IR spectroscopy ? (4+2)
23. a) What are the advantages of spectroscopic techniques ?
- b) Mention the number of signals and multiplicity of the signals in the NMR spectrum of  $\text{Cl}_2\text{CHCHO}$ . (4+2)
24. a) What is Chemotherapy ? How are drugs classified based on treatment of diseases due to infection ?
- b) Write the structure of diclofenac and mention its use. (4+2)
25. a) Give the synthesis of alizarin.
- b) Write the structure of chloramphenicol and mention its use. (4+2)

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